Amendments to the Claims

1. (currently amended) A receiver for demodulating a multi-tone, multi-band signal modulated using an inverse discrete Fourier transform to generate a signal having a plurality of tones spaced in frequency in a plurality of frequency bands, comprising:

a plurality of demodulators, wherein each of the plurality of demodulators demodulates a different one of the plurality of frequency bands of the multi-tone, multi-band signal, and wherein each demodulator includes a discrete Fourier transform module that performs a discrete Fourier transform on the plurality of tones within one of the plurality of frequency bands.

2. (original) The receiver of claim 1 wherein the process speed of each demodulator is determined by the respective frequency band.

3. (original) The receiver of claim 1 wherein each demodulator further includes an equaliser connected to the output of the discrete Fourier transform.

4. (original) The receiver of claim 1 wherein each demodulator further includes a filter for filtering the received signal prior to the discrete Fourier transform.

5. (original) A transceiver including a receiver according to claim 1.

6. (original) The transceiver of claim 5 in which each demodulator includes an echo canceller for removing an echo associated with a signal in a transmitter of the transceiver from the received signal.

7. (original) The transceiver of claim 6 in which the echo canceller is connected to remove the echo at the input to the discrete Fourier transform.

8. (original) The transceiver of claim 6 in which each echo canceller comprises an adaptive filter.

9. (original) The receiver of claim 1 in which the multi-band signal is generated by nulling selected tones in the modulator.

10. (original) The receiver of claim 1 in which the multi-band signal is generated by filtering the output of the modulator.

11. (currently amended) A method of demodulating a multi-tone, multi-band signal modulated using an inverse discrete Fourier transform, comprising the ~~step~~ steps of:

dividing the multi-tone, multi-band signal into a plurality of data signals, each data signal having a plurality of tones in one of the plurality of frequency bands; and

demodulating each of the plurality of data signals in a separate demodulator using a discrete Fourier transform.

12. (original) The method of claim 11 wherein each demodulator further comprises an equalisation step.

13. (original) The method of claim 11 wherein each demodulator filters the received signal prior to the discrete Fourier transform.

14. (original) The method of claim 11 in which the demodulating step is carried out in a transceiver.

15. (original) The method of claim 14 in which each demodulator further performs an echo cancellation step to remove an echo associated with the signal in a transmitter of the transceiver from the received signal.

16. (currently amended) The method of claim 11 wherein the multi-band signal is generated by nulling selected tones in the modulator.

17. (original) The method of claim 11 in which the multi-band signal is generated by filtering the output of the modulator.

18. (previously presented) The receiver of claim 1 further comprising a splitter that divides the received multi-tone, multi-band signal into a plurality of data signals, each data signal having a plurality of tones in one of the plurality of frequency bands,

wherein the splitter communicates each of the plurality of data signals to one of the plurality of demodulators that demodulates the frequency band of the data signal.

19. (previously presented) The receiver of claim 1 wherein the discrete Fourier transform module performs a discrete Fourier transform at sampling frequency (F_s, k) wherein the sampling frequency (F_s, k) is associated with the frequency band of the demodulator.

20. (previously presented) The receiver of claim 19 wherein the sampling frequency (F_s, k) is at least double the maximum frequency of the frequency band of the demodulator.